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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,862	01/03/2002	Eugene Britto John		4805

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EXAMINER	
LEE, BENJAMIN C	

ART UNIT	PAPER NUMBER
2632	4

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,862	JOHN ET AL.	
	Examiner	Art Unit	
	Benjamin C. Lee	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims Status

1. Claims 1-22 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 7-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over King, Jr. (US Pub. #2003/0054905) in view of Zelmanovich et al. (US pat. #6,347,229).

1) In considering claim 1:

King Jr. discloses a system that determines locations and identification of single or multiple, moving or stationary objects (ball, players) in a predefined area (court or field), comprising a transmitter and antenna within or attached to each object (Figs. 2-6, 8-14), using paired antennas dispersed around the perimeter of the predetermined area (70 of Fig. 1; paragraphs 0003, 0004); while Zelmanovich et al. teaches using two or more pairs of antennas to facilitate accurate location of objects using phase difference calculation (Abstract and Figs. 2A-2B).

King, Jr. does not specify determining the precise three-dimensional location of the objects using two or more pair of antennas. However, determining a location of an object in three-dimension would have been well known to a person of ordinary skill in the art at the time the invention was made. It would have been obvious to one of ordinary skill in the art at the time the claimed invention to determine the location of an object in a system such as taught by King, Jr. in 3D in order to provide a user with more precise form of location of the object in real space.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize two or more pairs of antennas enabling phase difference and coordinate calculation such as taught by Zelmanovich et al. in a system such as taught by King, Jr. to facilitate accurate location of objects by virtue of using such multi-paired antenna phase difference calculation.

2) In considering claim 2, King, Jr. and Zelmanovich et al. renders all of the claimed subject matter obvious as in claim 1, wherein:

Zelmanovich et al. discloses location and identification of objects using four receiver antennas arranged in closely spaced pairs (col. 4, lines 64-67), down-converters/receivers with local oscillators, phase locked loops, phase detectors (col. 6, lines 11-15 and 38-61) to determine the phase difference between the received signals in each pair of antennas (Fig. 2B) and to determine the phase difference between the received signal in antennas not in the same pair (Fig. 2A). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the known signal detecting and signal processing devices of Zelmanovich et al. in a system such as taught by King, Jr. and Zelmanovich et al. in order to facilitate detecting and processing signals indicating the locations of objects.

3) In considering claim 3, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, plus the consideration of claim 2, whereby:

--the claimed phase difference/comparison between the down-converted signals from each pair of receiving antennas constitutes a rough location establishment/calculation while the phase difference/comparison between the down-converted signals from elements selected from different antenna pairs constitutes precise location resolution in the King, Jr. and zelmanovich et al. system.

4) In considering claim 4, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a variable frequency local oscillator to enable selective reception of signals emanating from individual objects in a system such as taught by King, Jr. and Zelmanovich et al. as a way to accommodate changes in signal frequencies of the various object transmitters which may arise due to adaptation adjustments to deal with environmental noise or regulation requirements.

5) In considering claims 7-11, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, including:

--the claimed using the system "for" precise location and identification of: a) aircraft and service vehicles; b) child at a day care, school, mall or play ground area; c) prisoner at a prison, work detail off site, jail or penitentiary; d) pets in homes, apartments or any living quarters; e) livestock or animals in a zoo or preserve or national park, constitute intended uses for the system and thus do not alter the system components or functions in any way.

6) In considering claims 12-13, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, including:

--the claimed "for" aiding and training in officiating of any sporting events, and "for" generation of statistics in sporting events as intended uses are met by King, Jr. (e.g. see Abstract; page. 3, paragraphs 0034-0035 and page 4, paragraphs 0044-0048).

7) In considering claims 15 and 17, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, including:

-- the claimed "for" enhancing playing or spectator enjoyment of sporting events (King, Jr. discloses using radiolocation system for football game, hockey game, for reviewer enhancement or monitoring of subjects according paragraphs 0044, 0007, and 0008).

8) In considering claim 16, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, plus the consideration of claim 12.

9) In considering claim 19, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, including:

--the claimed area with defined boundaries (see Figures of King, Jr.).

10) In considering claim 18, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, plus the consideration of claim 17, wherein:

--the claimed "for" enhancing TV viewer enjoyment of sporting events constitutes an intended use, and furthermore that since sporting events are routinely televised along with monitored/calculated play or player statistics and data, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the monitored/calculated

information in a system such as taught by King, Jr. and Zelmanovich et al. would also be presented to the TV viewer when such sporting events are televised.

11) In considering claim 20, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, plus the consideration of any of claims 12-13 and 15-19, wherein:

--It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that all sporting events contested at Olympics are encompassed by sporting events in general involving players according to King, Jr.

5. Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over King, Jr. in view of Zelmanovich et al. and Desch (US. Pat. # 6,078,260).

1) In considering claim 5, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, while:

Desch teaches in person/object monitoring and locating system that allows the object monitor (201) to enable/disable the object device having a receiver (101) using a transmitter (col. 4, lines 11-23), and an alarm signal can be transmitted to the object being tracked (col. 2, lines 20-33).

In view of the teachings by King, Jr., Zelmanovich et al. and Desch, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include receivers at the object and an object transmitter to allow remote enabling/disabling and alarm signal transmission to the object to allow remote signaling/alarming such as taught by Desch in a system such as taught by King, Jr. and Zelanovich et al. for the purpose of selectively enabling/disabling the object device and signaling at the object to get its attention or to help

perceptibly identify it which add convenience to the user of the system. Furthermore, making he object transmitter frequency assignable allows selectability as well as adaptation to environmental noise and changing regulations.

2) In considering claim 21, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, plus the consideration of claim 5 further in view of Desch, wherein:

King, Jr. discloses a map-like display or overlay to display object locations (Fig. 16). Since interactive user interface displays are well known in the art, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that to implement the selective display object disabling/enabling function, frequency change function, or alarm signal sending function in a system such as taught by King, Jr., Zelmanovich et al. and Desch on a map-like interactive display or overlay operated by point and click at the displayed objects as a convenient interface for the user.

6. Claims 6 and 14 are rejected under 35 U.S.C. l03(a) as being unpatentable over King, Jr. in view of Zelmanovich et al. and Wadell et al. (US. Pat. # 6,204,813).

1) In considering claim 6, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, while:

Wadell et al. teaches in person/object identification and location tracking/monitoring system using object transceivers communicating with antenna arrays to detect three-dimensional position (col. 6, line 5) as well as velocity and acceleration parameters wherein the system is usable for tracking sport players (col. 4, lines 22-67 and col. 5, lines 45-65) as well as for collision avoidance systems (col. 12, lines 12-19) which inherently takes the detected

identification and position data of individual objects and compare them relative to each other so that hazardaous proximity or rate of approach of objects are automatically detected and alarm signals automatically transmitted.

In view of the teachings by King, Jr., Zelmanovich et al. and Wadell et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the collision avoidance feature such as taught by Wadell et al. in a system such as taught by King, Jr. and Zelmanovich et al. so that the system is able to detect and warn of potential collision hazards either between two players, between player and ball, or between player and physical obstacles that constitute physical hazardous when approached or approached at high rates to increase safety for the users.

2) In considering claim 14, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, wherein:

--the claimed "capable of" pinpointing and accurately determining yardage of first downs in a football game constitutes intended use and "capability" of the system of King, Jr. (which discloses pinpointing locations in a football game according to page 4, paragraphs 0044-0048) and Zelmanovich et al., and furthermore taught by Wadell et al. in a similar location and identification tracking system (col. 11, lines50-63).

In view of the teachings by King, Jr., Zelmanovich et al. and Wadell et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the football game yardage and game plays including first downs determination such as taught by Wadell et al. in a system such as taught by King, Jr. and Zelmanovich et al. to provide more specific football game related information for the users.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over King, Jr. in view of Zelmanovich et al. and Jain (US pat. #5,629,691).

1) In considering claim 22, King, Jr. and Zelmanovich et al. render all of the claimed subject matter obvious as in claim 1, while:

Jain teaches locating and identifying aircraft objects and determining when an aircraft entering the wrong runway (unauthorized runway incursions) to generate warning alarms at the control tower as well as generating automatic alert signals in the airplane (Abstract and col. 2, lines 36-50).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that an object identification and location tracking system such as taught by King, Jr. and Zelmanovich et al. can be used for identification and location tracking of aircraft wrong runway incursion such as taught by Jain just as well as an intended use of the system, and in such a case to generate warnings on the control tower as well as in the aircraft when an incursion has been detected involving an aircraft entering the wrong runway by identification and location tracking of aircraft and the runways/airfields.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US pat. Nos. 6111536, 5337041, 4356477, 5170172, 4975710, 5714932, 5218344, 5477210, 5086290, 5963130, 6316934, 4961575, 5640146, 6353406, 6504480, 6353390, 6084517, 6002334, 5987379, 6160497, 6150928, 5708421

--Similar location tracking methods for objects and people in various intended uses.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (703) 306-4223. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (703) 308-6730. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 2632

B.L.